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The agricultural output of
Saorstát Éireann

Dublin

1930

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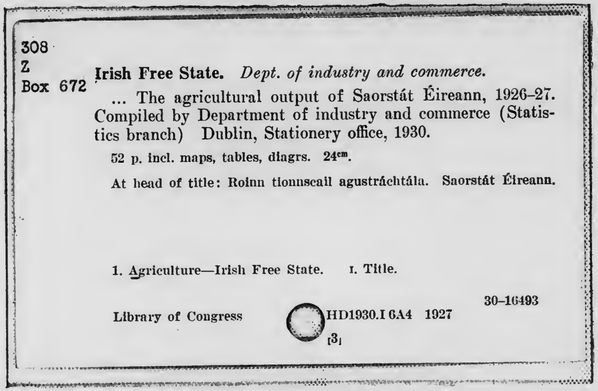

308
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Box 672

Irish Free State. *Dept. of industry and commerce.*

... The agricultural output of Saorstát Éireann, 1926–27. Compiled by Department of industry and commerce (Statistics branch) Dublin, Stationery office, 1930.

52 p. incl. maps, tables, diagrs. 24cm.

At head of title: Roinn tionnscail agustráchtála. Saorstát Éireann.

1. Agriculture—Irish Free State. I. Title.

Library of Congress HD1930.I 6A4 1927 30-16493
[3]

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TECHNICAL MICROFORM DATA

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The agricultural output of Saorstát Éireann

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2.

ROINN TIONNSCAIL AGUS TRÁCHTÁLA.

SAORSTÁT ÉIREANN

THE AGRICULTURAL OUTPUT OF SAORSTÁT ÉIREANN, 1926—27.

308
Z
B04672

COMPILED BY

DEPARTMENT OF INDUSTRY AND COMMERCE

(STATISTICS BRANCH)

DUBLIN:
PUBLISHED BY THE STATIONERY OFFICE.

To be purchased through EASON AND SON, LTD., 40 and 41 Lr.
O'Connell Street, Dublin.

1930.

P. No. 132.)

Price—Ninepence Net.

ERRATA.

Page 26. The figure in the 3rd line column (4) of Table 10 should read 19.2, instead of 12.2.

Page 27. The figure in the 6th line 3rd paragraph should read 19, instead of 12.

Wt. 49—P.91—Gp. 27—1,250—4/'30—M.P.W.

ROINN TIONNSCAIL AGUS TRÁCHTÁLA.

SAORSTÁT ÉIREANN

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Price—Ninepence Net.

P. No. 132.)

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THE OUTPUT OF AGRICULTURE IN SAORSTÁT ÉIREANN, 1926-27.

I. SUMMARY.

In respect of the calendar year 1926 a census of industrial production was taken in Saorstát Eireann and the preliminary results of the inquiry have been published. The results of the corresponding inquiry into the quantity and value of the annual output of agriculture are published in this Report.[*]

There is a fundamental difference between non-agricultural industry and agriculture which renders it necessary to estimate output by two quite different methods. The bulk of the output of most of the important industrial commodities is made by a few large firms who keep records of their operations from which the particulars required for Census purposes may be extracted. The output of agriculture is in the hands of a very large number of small producers the great majority of whom do not know the quantity and value of their annual output. Consequently it would be impracticable to obtain from all agricultural producers sufficiently accurate statements of the quantities and values of their output in a given year, particulars about raw materials purchased, wages paid, etc., and other information such as can be obtained from the industrial producers. In estimating agricultural output it was necessary to rely to a considerable extent on large-scale sample inquiries but it has been possible to give figures based on complete enumerations of the output of cattle, sheep and pigs which between them account for 40 per cent. of the total value of agricultural output.

Value of Gross Output.—The output of agriculture in Saorstát Eireann in the year 1926-27 is estimated at £64,757,000. The following table shows the quantity and value of the more important items of output. A more detailed account will be found on pp. 44-46.

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[*] Two former inquiries into the output of agriculture, the first for 1908, the second for 1912-13 were published by the Department of Agriculture giving data for Ireland as a whole. The results appeared in "The Agricultural Output of Ireland 1908" (published in 1912) and in the appendix to the "Report of the Departmental Committee on Food Production" Cd. 8158 (published in 1916).

TABLE 1.

		Quantity.		Value.
I.—LIVE STOCK AND LIVE STOCK PRODUCTS :—			000's	£000
Whole milk*	Consumed by persons or exported	Gals.	89,000	3,161
Buttermilk, separated and skim milk		,,	72,000	375
Whole milk* sold to Creameries ...		,,	168,000	4,228
Butter made on farms†		Cwt.	904	5,929
TOTAL MILK PRODUCTS ...		—	—	13,693
Cattle	Slaughtered in, or exported alive from, Saorstát Eireann, plus increases in stocks.	No.	854	13,809
Sheep		No.	1,122	2,058
Pigs		No.	1,631	9,874
Poultry		No.	12,200	2,327
Eggs		Gt.Hnds.	10,791	6,690
Horses (*i.e.*, output of non-agricultural horses)		No.	14	1,234
Wool		lbs.	14,459	685
Honey, feathers and " fallen " hides ...		—	—	185
TOTAL LIVE STOCK AND LIVE STOCK PRODUCTS		—	—	50,555
II.—CROPS :—				
Potatoes	Consumed by farmers and their families or sold by them.	Tons	741	3,786
Cabbage		Tons	167	920
Oats		Cwt.	2,553	989
Barley		Cwt.	2,256	902
Sugar-beet		Tons	86	259
Hay		Tons	109	316
Fruit		—	—	466
Other crops (including timber not used as fuel. Timber used as fuel should theoretically be included, but it has not been possible to estimate it with sufficient accuracy).		—	—	626
TOTAL CROPS ...		—	—	8,264
III.—TURF		—	—	5,938
TOTAL GROSS OUTPUT ...		—	—	64,757

* The total quantity of whole milk produced was estimated at 589,000,000 gallons.

† The quantity of butter made in creameries was 587,000 cwt., so that the total butter produced in Saorstát Eireann was estimated at 1,491,000 cwt.

Definition of Output.—Gross output is taken to mean that portion of total production which is sold off farms or which is consumed in farm households together with increases in stock

between the beginning and end of the year of inquiry. It does not include any part of the produce which was used for further agricultural production in the Saorstát whether that part was used on the farm on which produced or sold by one Saorstát farmer to another, *e.g.*, milk fed to calves, potatoes fed to pigs, hay, turnips or mangels fed to cattle, corn used for seed, horses used for farm work. The inclusion of such transactions or items would obviously result in duplication in the total of gross output. For instance, if potatoes fed to pigs were included in output these potatoes would be counted twice over, once in the value of potatoes and once in the value of pigs sold.

Valuation of Output.—In the valuation of output in the foregoing and in the other tables in this report the official agricultural prices at fairs and markets in Saorstát Eireann in the year 1926-27 were used for the most part, because these were the most reliable prices available. It is recognised that for most purposes it would have been preferable to value that part of output which is consumed on farms at prices *at farms* (fair or market price less transport charges from farm). No data were available from which such prices could be derived within a reasonable margin of accuracy. It was necessary to assume that produce consumed on farms was identical in quality with produce sold, an assumption which is probably true in general. Fair or market prices were used for valuing output *sold* because the great bulk of such produce is marketed by agriculturists themselves.

Year of Inquiry.—For crops the year to which the inquiry refers is the year of disposal of crops produced in 1926—taken as the twelve months ended 30th June, 1927 for potatoes, the twelve months ended 31st August, 1927, for barley, and the twelve months ended 30th September, 1927, for all other crops. For most of the live stock and live stock products the year of inquiry is the twelve months ended 31st May, 1927.

Sources of Information and Methods of Determining Output.—The whole of the "gross output" of agriculture (and turf) is disposed of directly in one or other of the following ways :

(1) Exported from the Saorstát.
(2) Used as raw material in Saorstát industries.
(3) Consumed by the population of the Saorstát.
(4) Consumed by non-agricultural live stock in the Saorstát (*e.g.*, by horses in towns).
(5) Increases in stocks.

Complete returns of (1) were available from the ordinary trade statistics and of (2) from the Census of Industrial Production. Complete returns covered part of (3)—compulsory returns (under the Statistics Act) of slaughterings of pigs (for pork), cattle and sheep, and returns made by the Gárda Síochána of pigs slaughtered on each farm for consumption thereon. The remainder of (3) and the whole of the small output disposed of in (4) had to be estimated (*a*) from information obtained through the post in answer to special inquiries made at different dates from large numbers of farmers, from agricultural, horticultural and poultry instructors, etc. (*b*) from information obtained by the Gárdaí at the ordinary collection of statistics at each farm in June, 1927, and (*c*) from information obtained from large numbers of farmers on several other occasions by special inquiries made by the Gárdaí who as usual were exceedingly helpful.

The whole inquiry was conducted with the advice and constant assistance of experts of the Department of Agriculture. As already stated a substantial part of the output was covered by complete returns and involved no element of estimate. When estimates had to be made several methods were used and the final results in respect of important products can be accepted as sufficiently reliable. A detailed account of the methods of estimating for each product is given later.

Value of Crops.—The total value of crops (including turf) produced in the Saorstát in 1926 is estimated at £45,687,000 exclusive of the value of grazing. (No attempt is made in this Report to estimate even roughly the annual value of grass land). Of this £45,687,000, crops valued at £31,485,000 were used in the Saorstát for further agricultural production leaving only £14,202,000 as shown above for the value of the "output" of crops and turf.

Disposal of Output.—The agricultural output was disposed of as follows :—

	£	%
Consumed by the agricultural community*	23,071,000	35.6
Consumed or utilised by others in Saorstát Eireann	11,569,000	17.9
Exported	28,400,000	43.9
Increases in stocks	1,717,000	2.6
	64,757,000	100.0

The foregoing figures are designed to show the ultimate importance of the home and of the external market for Saorstát agricultural produce and consequently they are based on the proportion in which agricultural produce is finally consumed even after undergoing industrial processes. For instance, the first item while of course including butter, milk, eggs, potatoes, turf, etc., consumed by agriculturists also includes the estimated value of Saorstát grown wool contained in clothing purchased by them. It also includes the value of milk in creamery butter, barley in beer and spirits, and pork in Irish bacon consumed by farmers. In the distribution of some of the less important commodities on this basis there is naturally a large element of estimate. Taking all commodities together, however, the error of estimate is probably small.

---

* Throughout this report the terms "agricultural community" or "agriculturists" are taken to mean the 1,815,496 persons returned at the Census of 1926 as living outside towns and villages. The "non-agricultural community" represents the remainder of the population—1,156,496 persons.

Of the gross output, therefore, more than one-third is consumed by agriculturists, one-sixth is consumed by non-agriculturists in Saorstát Eireann and no less than 44 per cent. is exported. In the first case the consuming population is 1,815,496—the population of Saorstát Eireann living outside towns and villages in 1926; in the second 1,156,496; and in the third 45,220,000 substantially (the estimated population of Great Britain and Northern Ireland in 1926). It follows that each Saorstát agriculturist consumed £12 14s. per head per annum of Saorstát agricultural produce, each Saorstát non-agriculturist £10 and each person in Great Britain and Northern Ireland about 13 shillings, valued at farmers' prices in each case. These figures while indicating the possibilities of the markets of Great Britain, measure the importance to Irish agriculture of an increased town population in this country. The export market is 2½ times as valuable as the home market (*i.e.*, sales to non-agriculturists) but the average townsman in the Saorstát is incomparably a better customer of Saorstát agriculturists than the townsman in Great Britain.

The following table shows the manner of disposal of the output of some of the more important products.

[TABLE

TABLE 2.

Agricultural Products and Turf.	Gross Output.	Disposal		
		Consumed by Saorstát Agricultural community.	Otherwise utilised in Saorstát Eireann	Exports and increases in Stocks.*
	£000	£000	£000	£000
I.—LIVE STOCK AND LIVE STOCK PRODUCTS :—				
Whole milk consumed by persons	3,161	1,725	1,416	20
Butter made on farms and in creameries	9,845	4,564	1,778	3,503
Cream sold by creameries	312	—	24	288
Buttermilk, etc., consumed by persons	375	350	20	5
TOTAL MILK AND MILK PRODUCTS ...	13,693	6,639	3,238	3,816
Cattle and calves ...	13,809	187	1,666	11,956
Sheep and lambs	2,858	203	1,315	1,340
Pigs	9,074	1,439	1,416	6,219
Poultry	2,327	1,410	170	747
Eggs	6,690	2,836	929	2,925
Other items (horses, wool, feathers, etc)	2,104	51	236	1,817
TOTAL LIVE STOCK AND LIVE STOCK PRODUCTS	50,555	12,765	8,970	28,820
II.—CROPS :—				
Potatoes	3,786	3,252	415	119
Cabbage	920	744	176	—
Other crops (oats, barley, sugar-beet, hay, etc.) ...	3,558	716	1,664	1,178
TOTAL CROPS ...	8,264	4,712	2,255	1,297
III.—TURF	5,938	5,594	344	—
GROSS OUTPUT ...	64,757	23,071	11,569	30,117

*Values on 1st June, 1927, of increases in numbers of stocks between 1st June, 1926, and 1st June, 1927, were as follows: Cattle and calves £664,000, sheep and lambs £224,000, pigs £803,000, poultry £27,000, and horses a decrease of £1,000.

It will be seen that only a small proportion of the output of cattle and sheep is consumed by the agricultural community.

On the other hand the great bulk of the output of potatoes and turf and just one-half of the output of dairy products is consumed by them. The next table is a summary account of the output consumed by the agriculturists.

TABLE 3.

CONSUMPTION BY AGRICULTURAL COMMUNITY OF	Value at Farmers' prices.	As percentage of gross output of all products.	As percentage of total output of item on left.
	£000	Per cent.	Per cent.
Butter	4,564	7·0	46·3
Whole milk	1,725	2·7	54·6
Potatoes and cabbage	3,996	6·2	84·9
Eggs and Poultry	4,246	6·6	47·1
Pigs	1,439	2·2	15·9
Other agricultural products ...	1,507	2·3	6·5
Turf	5,594	8·6	94·2
TOTAL	23,071	35·6	35·6

More than half (54.6 per cent.) of the *value* of the whole milk consumed as such and nearly half of the *value* of the output of butter, eggs, and poultry was consumed by the producers.

The following table shows the value of the principal agricultural exports and compares these values with the gross output of all products :—

TABLE 4.

EXPORTS OF	Value at Farmers' prices.	As percentage of gross output of all products.	As percentage of total output of item on left..
	£000	Per cent.	Per cent.
Horses	1,032	1·6	83·6
Cattle and calves	11,292	17·4	81·8
Butter and cream	3,791	5·9	37·3
Sheep and lambs	1,116	1.7	39·0
Pigs	5,416	8·4	59·7
Poultry	720	1·1	30·9
Eggs	2,925	4·5	43·7
Wool	639	1·0	93·3
"Fallen" cattle hides	108	0·2	100·0
Oats	345	0·5	34·9
Barley	639	1·0	70·8
Potatoes	119	0·2	3·1
Flax	82	0·1	100·0
Other agricultural products ...	176	0·3	1·5
TOTAL	28,400	43·9	43·9

The last column of the table shows that 81.8 per cent. of the large annual production of cattle is exported, 59.7 per cent. of the output of pigs, 37.3 per cent. of the output of butter and cream, etc., etc. The middle column shows for instance that 23.3 per cent. of the gross output of agriculture is exported as cattle and dairy produce.

The values of industrial raw materials included in the output of agriculture have in the foregoing tables been distributed according to the destination of the final product into which these materials were manufactured in Saorstát Eireann.

The following table gives the quantities and values (at farmers' prices) of these items of output.

TABLE 5.

Raw materials sold for manufacture in Saorstát Eireann.	Quantity		Value
		000's.	£000
Milk sold to creameries	gals.	168,000	4,228
Pigs sold for curing	No.	643	4,013
Wool sold to woollen mills	lbs.	1,657	78
Barley sold for malting	cwt.	1,829	732
Oats sold to grain mills	cwt.	332	129
Wheat sold to grain mills	cwt.	84	51
Sugar-beet	tons	86	259
Timber sold to saw mills	loads	55	66
Turf used as, or manufactured into, fuel	tons	20	19
TOTAL	—	—	9,575

The quantities and values of fodder consumed by non-agricultural horses in Saorstát Eireann in the year 1926-27 were as follows :—

TABLE 6.

	Quantity		Value.
		000's	£000
Oats	cwt.	1,334	517
Hay	tons	107	309
Straw	tons	8	16
TOTAL	—	—	842

Comparison with Northern Ireland, Great Britain and Denmark.—In the following table the agricultural output of England and Wales and of Scotland are compared with the corresponding figures for this country :—

TABLE 7.

——	Year. (1)	Value of output. (2)	Output valued at Saorstát prices in 1926-27. (3)	Workers in Agriculture (Census). (4)	Output per worker [(3) ÷ (4)] (5)	Output (Col. 3.) per 100 acres crops and pasture. (6)
		£ mil.	£ mil.	No.	£	£
Saorstát Eireann ...	1926–27	64.8	64.8	672,129	96	528
Northern Ireland ...	1924–25	15.1	15.7	149,968	104	633
England and Wales ...	1925	219.8	211.7	1,254,350	169	822
Scotland ...	1925	43.7	35.7	194,301	184	759

The output of agriculture in 1925 as officially estimated in the respective countries was £225,330,000 in England and Wales and £48,660,000 in Scotland, but as both these figures include the value of imported store cattle estimates of the value of the latter have been made and deducted from the gross totals to give the values shown in column (2) of the foregoing table.

Official estimates for output of agriculture in Denmark do not appear to exist. Mr. R. J. Thompson,[*] Assistant Secretary, Ministry of Agriculture and Fisheries, London, working for the most part on estimates of agricultural production of Denmark made by Mr. Harold Faber[†] estimated the agricultural output of Denmark in 1922, valued at British 1922 prices, at £88,810,000 or £196 per worker in agriculture and £1,115 per 100 acres crops and pasture.

Whether measured per person or per acre the output of agriculture is very considerably less in this country than in Great Britain or Denmark. It was only £96 per worker in the Saorstát as compared with £104 in Northern Ireland, £169 in England and Wales, £184 in Scotland and about £196 in Denmark.

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[*] Journal of the Royal Statistical Society, March, 1926.

[†] *Ibid.*, January, 1924.

Net Output of Agriculture.—For the present inquiry all the agricultural land in the Saorstát has been regarded as one large farm. Accordingly, in order to estimate net output, it is only necessary to deduct the value of farm materials purchased by farmers as a body during 1926-27 from the gross value of output. The considerable commerce in farm materials between Saorstát farmers is left out of account. The following are the estimated values at retail of materials purchased in 1926-27 :—

	£
Animal feed	6,559,000
Fertilisers	1,301,000
Seeds (including cleaning and retailing charges)	689,000
Total farm materials purchased	£8,549,000

As the gross output is estimated at £64,757,000, the net output is £56,208,000.

Net Output of Agriculture and of other Industries.—In comparing the income in cash and kind of the agriculturist with the cash income of the townsman commodities like milk, butter, eggs and potatoes which agriculturists produce and consume on farms heretofore valued at farmers' (or wholesale) prices should be valued at retail, the price which the non-agriculturist has to pay. It is estimated that when this *part* of output is valued at retail the net output (£56,208,000 at farmers' prices) is approximately £67¾ millions or about £101 per worker in agriculture. The Census of Industrial Production shows that the net output of 107,000 workers (including workers in the public utility and building trades as well as in the " manufacturing " industries) was £24,190,000 in 1926 or £225 per worker.

Land annuities, rents and rates of agricultural land and purchases of farm tools and machinery amounted to about £8½ millions constituted roughly as follows : Land annuities (gross) £3¼ millions, rent on unpurchased land £1½ millions, rates on agricultural land £2¼ millions, tools, machinery, blacksmiths' charges, etc., £1½ millions. There remains £59¼ millions (£67¾ less £8½ millions) which represents approximately the annual remuneration for farmers and labourers. This averages about £88 per worker in agriculture. The total sum paid out in wages and salaries to workers in non-agricultural industry in 1926 was £14,276,000 or £133 per worker. The contrast is not quite so great as even these figures indicate as the agriculturist has to pay no house rent out of the £88 while the industralist has to pay his rent out of the £133. It must, however, be borne in mind that a substantial portion of the £88 is not a cash income, it includes the milk, butter, potatoes, etc., consumed by farmers valued (for the special purposes of this comparison) at *town prices.*

The following table summarises data given in preceding paragraphs and in addition compares net output with the value of materials worked on in agriculture and industry :—

DIVISION OF GROSS OUTPUT.	AGRICULTURE		INDUSTRIES
	Actual values.	Percentage of net output.	Percentage of net output.
	£ million	Per cent.	Per cent.
A.—Remuneration for all grades of workers	59¼*	87	59
B.—Profits, interest on capital, purchase of machinery, rents, land annuities, rates, etc. ...	8½	13	41
NET OUTPUT=A+B=	67¾	100	100
C.—Materials purchased for further production	8½	13	161
GROSS OUTPUT=A+B+C=	76¼*	113	261

* Includes remuneration in kind valued at retail.

There is a slight theoretical error in the above table as regards the inclusion and exclusion of profits, but taken broadly the comparison shown is true as the agriculturists are the owners of the farms. The table brings out the very significant difference between agriculture and industry. In industry the net output is produced by the addition of value to large purchases of raw materials produced by others which amount to 161 per cent. of the net industrial output; in agriculture very little of the net output is obtained by the addition of value to purchased materials which amount to only 13 per cent. of the net agricultural output; the agriculturists produce primary raw materials part of which they sell or consume, part of which they work up into secondary products. There is also a very significant difference in the manner in which the net output is expended; in agriculture 87 per cent. of it goes to the workers of all grades, in industry the percentage is only 59.

In the above table only percentages are shown for industries. To insert an absolute figure for total gross industrial output would be quite misleading in comparison with the figure for agriculture as such large expenditure on materials is involved in the former and so little in the latter. These matters will be gone into in detail in the final publication reviewing the Censuses of Agricultural and Industrial Output.

Valuation of Live Stock.—The following table shows the numbers and the estimated capital value of live stock on farms on 1st June, 1926, and 1st June, 1927. The numbers were derived from the ordinary Agricultural Statistics and the values per head from returns received from Agricultural Instructors :—

TABLE 8.

—	Number		Estimated Value	
	1st June, 1926	1st June, 1927.	1st June, 1926.	1st June, 1927.
	No.	No.	£	£
Horses* ...	379,387	381,182	6,489,000	6,489,000
Cattle ...	3,947,249	4,047,013	51,361,000	50,090,000
Sheep ...	3,003,080	3,120,308	7,747,000	6,313,000
Pigs ...	884,216	1,177,737	3,435,000	3,305,000
Poultry ...	21,366,801	21,583,541	2,411,000	2,439,000
Asses ...	199,172	197,004	255,000	252,000
Mules & Jennets	20,673	19,065	157,000	144,000
Goats ...	189,439	185,810	81,000	80,000
Total ...	—	—	£71,936,000	£69,112,000

* " Broken " agricultural horses together with all unbroken horses.

II.—Production of Milk and Butter.

In the following pages a summary description will be found of the methods which were adopted in the estimation of production, output and manner of disposal of agricultural products. A fairly detailed analysis is first given of the results obtained from an inquiry into the output of dairy products which constituted more than one-fifth of the total output.

Milk Yields.—In 1926-27 the estimated annual yield of milk in Saorstát Eireann was 487 gallons per milch cow. As the average number of milch cows in 1926-27 was 1,209,022 the estimated annual production (including milk made into butter, cream, etc., and milk fed to stock) was 589,000,000 gallons. The method of estimation is described on p. 20 *et seq.*

In the following statement the Saorstát milk yield is compared with milk yields* in other countries.

	Gallons.		Gallons.
Switzerland (1923) ...	654	Esthonia (1925-26) ...	360
Denmark (1925) ...	645	France (1923) ...	355
England & Wales (1924-25)	535	U. S. A. (1919) ...	333
Sweden (1920) ...	498	Canada (1927) ...	327
Saorstát Eireann (1926-27)...	**487**	Norway (1920) ...	322
Scotland (1924-25) ...	480	Australia (1926-27) ...	319
Bavaria (1913) ...	467	Finland (1921) ...	304
Northern Ireland (1924-25)	407	Chili (1922) ...	179
Japan (1922) ...	392		

When it is considered that the milch cow in this country is a dual purpose animal, bred for the production of beef as well as milk, the position which the Saorstát occupies in the foregoing list is not discreditable. Furthermore, the yields in the two leading countries, Switzerland and Denmark, which far outdistance the others, are not much greater than the Co. Limerick yield. In Co. Dublin the milk yield is greater than in England and Wales. County yields are discussed later on.

The average yield per Milch Cow in the Saorstát in 1926-27 was 487 gallons and in Northern Ireland in 1924-25 was 407 gallons. Accordingly taking the numbers of Milch Cows North and South into account the present average yield for Ireland is about 474 gallons as compared with 436 gallons estimated for 1912-13.† While the figures may not be strictly comparable (the methods employed at the recent inquiry being more exhaustive and accurate) they probably reflect fairly accurately the change in yields.

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* All these yields have been deduced from figures published in the International Institute of Agriculture publication " Milk and Milk Products " (1924) except those for Saorstát Eireann, Northern Ireland (" The Agricultural Output of Northern Ireland, 1925 "—Cmd. 87/1928), England and Wales (" The Agricultural Output of England and Wales, 1925 "—Cmd. 2815/1927), Scotland (" The Agricultural Output of Scotland 1925 "—Cmd. 3191/1928), Denmark (from a Dutch official publication entitled " Report and Transactions of the Administration of Agriculture, 1927, No. 3—The Dairy Industry in Denmark "), Esthonia (" Agriculture in Esthonia—Album Statistique "), and Canada (" Monthly Bulletin of Agricultural Statistics," December, 1928).

† Departmental Committee on Food Production in Ireland—Minutes of Evidence (Cmd. 8158/1916).

Disposal of Milk.—The following table indicates the manner of disposal of milk produced in 1926-27 :—

TABLE 9.

(Note :—It has been assumed that 1 lb. of farmers' butter is made from 2⅔ gallons of whole milk and that 1 gallon of cream is made from 15 gallons of whole milk).

MANNER OF DISPOSAL.	Actual Quantity.	Equivalent in milk.	Percentage of total production.
		Million Gallons.	Per cent.
Consumed by live stock on farms	62 mil. gals.	62	10·5
Consumed by agriculturists :—			
Milk	69 mil. gals.	69	11·7
Butter (*a*)	693,000 cwt.	202	34·3
Consumed by Saorstát non-agriculturists :—			
Milk	20 mil. gals.	20	3·4
Cream	64,000 gals.	1	0·2
Butter	270,000 cwt.	79	13·4
Exported :—			
Milk	(*b*)	(*b*)	—
Cream	761,000 gals.	11	1·9
Butter	528,000 cwt.	145	24·6
TOTAL PRODUCTION ...	—	589	100·0

(*a*) Includes the butter equivalent of cream consumed on farms.

(*b*) Less than 500,000 gallons.

This table shows that of the total production of 589 million gallons only 527 million gallons can be regarded as output (in the sense in which the term is used here) as the 62 million gallons fed to live stock is used in further agricultural production. This reduces the total annual yield of the average milch cow from 487 gallons to an effective yield of 436 gallons (comparing with 614 gallons in Denmark, 482 gallons in England and Wales, 430

gallons in Scotland). The table also shows that 271 million gallons are consumed either as milk or butter by persons on the farms on which they are produced, so that only 256 million gallons of milk are available for sale in one form or another.

The total milk production and the manner in which it was utilised in certain countries is shown in the following tables :*

County.	Total Production	As percentage of total production		
		Fed to Live stock.	Milk† consumed in producers' households.	Milk† sold by producers.
	Million gallons.	Per cent.	Per cent.	Per cent.
Saorstát Eireann (1926-27)	589	10·5	46·0	43·5
England & Wales (1924-25)	1,241	10·0	8·5	81·5
Scotland (1924-25) ...	190	10·0	16·3	73·7
Switzerland (1923) ...	528	17·6	15·1	67·3

† *i.e.*, milk and its equivalent in butter, etc.

For certain other countries the manner of disposal is shown differently :—

County	Total Production.	As percentage of total production		
		Fed to Live stock.	Used for making milk products.	Consumed by persons as milk.
	Million gallons.	Per cent.	Per cent.	Per cent.
Saorstát Eireann (1926-27)	589	10·5	74·4	15·1
Northern Ireland (1924-25)	98	12·2	57·2	30·6
England & Wales (1924-25)	1,241	10·0	18·4	71·6
Scotland (1924-25) ...	190	10·0	17·9	72·1
Denmark (1925) ...	897	4·8	87·3	7·9
France (1923)	2,592	21·8	46·0	32·2
Germany (pre-war) * ...	5,081	8·5	53·2	38·3

* These tables have been constructed from data given in the publications referred to on page 15. The figures given for Germany are averages of the results of five private inquiries.

Perhaps the most striking feature of these tables is the very high proportion (46.0 per cent.) of milk consumed by Saorstát agriculturists—or conversely the small proportion (43.5 per cent.) which is sold. The low percentage of the total production which is consumed as milk by persons or by live stock in Denmark (12.7 per cent. as compared with 25.6 per cent. in the Saorstát) will be noted. The proportion of milk sold for consumption as milk is, of course, very much larger in Great Britain, with its large urban population, than in this country.

The following table shows the estimated total output and manner of disposal of creamery and farmers' butter in Saorstát Eireann in 1926-27 :—

——	Total output.	Consumed in Saorstát.	Exported.	Exports as percentage of total output.
	cwt.	cwt.	cwt.	Per cent.
Creamery butter ...	587,000	210,000	377,000	64·2
Farmers' butter ...	904,000	753,000	151,000	16·7
Total butter ...	1,491,000	963,000	528,000	35·4

While only one-sixth of the total output of farmers' butter was exported, upwards of two-thirds of the creamery butter produced was exported. The following table shows how these proportions compare with the corresponding figures for the principal sources of the British butter supply :—

Country.	Year.	Total Production.	Percentage of Production	
			Home consumed.	Exported.
		cwt.	Per cent.	Per cent.
Saorstát Eireann ...	1926–27	1,491,000	64·6	35·4
Denmark	1925	2,775,000	12·9	87·1
Australia	1926–27	2,255,000	69·7	30·3
New Zealand ...	1925	1,475,000	24·6	75·4

There is therefore a very considerable difference between the Saorstát and Australian proportions exported on the one hand and the Danish and New Zealand proportions on the other. The Danish proportion is even much higher than the corresponding figure for Saorstát creamery butter. Denmark consumed only

358,000 cwt. of home produced butter while in the Saorstát with a population less than Denmark no less than 963,000 cwt. of home produced were consumed. The following table shows the consumption of milk and butter (whether home produced or imported) per head of population in a number of countries :—

Country.	Year.	Consumption per Person per annum		
		Butter.	Milk.	Milk equivalent of butter(*c*) and milk.
		lbs.	gals.	gals.
Saorstát Eireann ...	1926–27	38	30	129
New Zealand ...	1925	31	(*a*)	(*a*)
Australia	1926–27	30	(*a*)	(*a*)
Great Britain ...	1924–25	16	23	65
U. S. A.	1919	15	43 (*b*)	82
Netherlands	1927	13	(*a*)	(*a*)
Denmark	1925	12	19	50
Norway	1920	11	49	78
Switzerland	1923	11	59	88
France	1923	8	21	42

(*a*) Not available. (*b*) 1922. (*c*) 1 lb. butter taken as equivalent to 2.61 gallons whole milk—the estimated Saorstát equivalent.

The butter consumption per head of population is considerably higher in Saorstát Eireann than in Australia and New Zealand and more than twice as high as in any of the remaining countries on the list. On the other hand the consumption of whole milk (as milk) in the Saorstát is not exceptionally high : it exceeds the consumption in Great Britain, France and Denmark but is exceeded by the figures for Switzerland, Norway and U.S.A.

In the great milk producing country Denmark the milk consumption per head of population (as milk or butter) is only 50 gallons compared with 129 gallons in the Saorstát. But in Denmark the consumption of margarine is very high—46 lbs. per head—as against 3 lbs. per head in the Saorstát and 13 lbs. in Great Britain. The Danish practice of exporting a superior article and consuming a cheaper substitute at home is therefore akin to the Irish practice with regard to bacon. The Danes, however, manufacture the bulk of the margarine they consume while the cheaper bacon consumed in Ireland is imported.

The total consumption of butter in Saorstát Eireann in 1926-27 was 1,008,000 cwt. of which 45,000 cwt., or 4.5 per cent., was imported.

The Estimation of Yield.—The accurate estimation of milk yield is notoriously difficult. In consequence the methods which were adopted in the present inquiry are described in some detail. Several estimates were made. In April, 1927, some 30,000 farmers selected at random from amongst those who rendered voluntary returns during the period 1919-1925 (when it was necessary to rely on the sample method for the estimation of the ordinary agricultural statistics) were asked to state amongst other things (1) the number of gallons of milk they obtained from their milch cows in each of the months January to April, and (2) the number of their milch cows in April. All the farmers from whom replies were received were again circularised in August, 1927, and asked the same particulars in respect of the months May to August; and the farmers from whom replies were received on this occasion were again circularised in January, 1928, for particulars for the remaining months of the year 1927. Accordingly the number of gallons of milk obtained per milch cow per month in 1927 was known in respect of a sample of farms distributed all over the country. Although 30,000 farmers were circularised in the first instance it was possible to use only 2,440 returns covering about 16,000 milch cows. From this inquiry it was estimated that the average yield of milch cows in 1927 was 465 gallons. On account of the smallness of the sample of farmers from which it was derived, however, this estimate was not accepted.

Again, on the questionnaire of January, 1928, farmers were asked "About how many gallons of milk did the average cow in your district yield during 1927?." From the answers received it was calculated that the average yield of milk was 481 gallons in 1927. This query was repeated in an inquiry made by the Gárda Síochána in January, 1929, in respect of the year 1928 and an average yield of 510 gallons was obtained. While the average which was finally adopted—487 gallons—lies between these estimates the correspondence appears to be largely coincidental as the county yields differed widely. As county yields were in any case required a more accurate method had to be devised.

The annual milk yield per milch cow as finally adopted (and the total production of milk) was estimated by combining the results of two inquiries: (1) from the sample returns to which reference has been made in the second last paragraph showing the monthly milk production in 1927 of 2,440 farmers the typical seasonal fluctuations in the milk supply were determined; (2) all the farmers in the country were asked at the time of the collection of the ordinary agricultural statistics in June and July, 1928 (and a few as late as August, 1928) the number of gallons of milk obtained from their cows on the day previous to the enumerator's visit and in this way the average yield of milk in June and July, 1928, for all the milch cows in the country was determined. From the sample inquiry the relation of the annual yield of milk to the yield in June and July was known. Thus the annual yield of milk in 1928 was found.

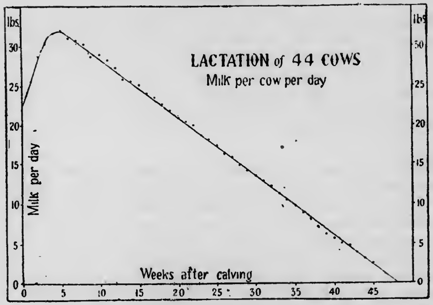
The accuracy of the estimate of yield depends therefore on the accuracy of the ratio of annual yield to the yield in June and July as determined from the sample of only 16,000 cows. To check the accuracy of the seasonal proportions, therefore, the best available information about calving was used and was allied to certain sample statistics showing the trend of lactation at different periods after calving. Two complete inquiries were made into the seasonal fluctuations in calving—during the twelve months ended May, 1913, and during the twelve months ended May, 1918, and the proportions of births as recorded for each month were sufficiently alike to warrant the assumption that (within reasonable limits) the proportions were permanent and could be assumed to obtain in 1928. The following were, in fact, the proportion of calves born in each month and averages of the proportions :—

Percentages of calves born in each month of the year in Saorstát Eireann.

Period.	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
1912–13 ...	5·4	10·2	28·2	27·7	15·9	1·4	1·4	1·7	1·7	1·6	1·9	2·9	100
1917–18 ...	5·1	10·3	26·4	29·6	18·2	1·3	1·1	1·3	1·3	1·4	1·6	2·4	100
Average ...	5·2	10·3	27·3	28·7	17·0	1·4	1·2	1·5	1·5	1·5	1·7	2·7	100

Accepting the last row of percentages as typical for 1928 it only remained to determine a suitable series of numbers which would show absolutely or relatively the quantity of milk which an average cow would yield at different times after calving. With this object in view the records of a number of cows provisionally selected for registration under the Department of Agriculture's scheme for the registration of pure-bred dairy cattle were examined. These records are very accurately kept and show for one day in each week (usually Tuesday) for 45 weeks after calving the number of pounds of milk obtained morning and evening. In all 44 records were examined—the first to hand.

DIAGRAM 1.

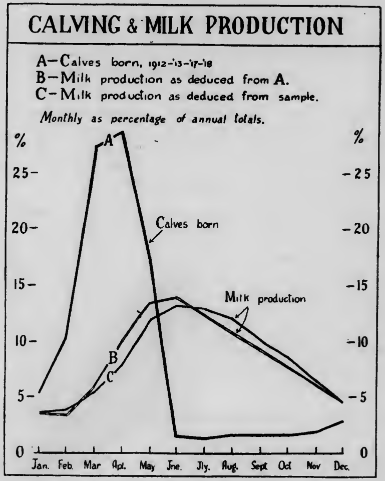


The following table shows the average weight of milk obtained per cow per day in each week after calving :—

Weeks after calving.	Average milk per cow per day (44 cows).	Smoothed average.	Weeks after calving.	Average milk per cow per day (44 cows).	Smoothed average.
	lbs.	lbs.		lbs.	lbs.
1	25·5	25·6	24	18·2	18·0
2	28·8	28·5	25	17·4	17·2
3	30·4	30·5	26	16·3	16·5
4	31·6	31·6	27	15·8	15·7
5	31·8	31·9	28	14·8	15·0
6	31·0	31·3	29	14·2	14·3
7	30·7	30·6	30	13·5	13·5
8	30·3	29·8	31	12·9	12·8
9	28·7	29·1	32	12·2	12·0
10	29·0	28·3	33	11·3	11·3
11	28·3	27·6	34	10·5	10·5
12	27·3	26·9	35	9·8	9·8
13	25·8	26·1	36	8·9	9·1
14	25·5	25·4	37	8·1	8·3
15	25·1	24·6	38	7·0	7·6
16	24·0	23·9	39	6·2	6·8
17	23·5	23·2	40	5·6	6·1
18	22·6	22·4	41	5·1	5·3
19	21·8	21·7	42	4·8	4·6
20	20·9	20·9	43	3·9	3·9
21	20·4	20·2	44	3·1	3·1
22	20·0	19·4	45	2·6	2·4
23	18·8	18·7			

From Diagram 1 constructed from the foregoing table it is evident that there is a simple law connecting the number of days after calving with the daily yield which held for all classes of cows : after calving milk yields increase to reach a maximum in about the fifth week and then decline with absolute regularity, so that in a given interval of time after the maximum has been reached the decline in milk yield is the same at all points in the lactation period. For instance, the decline in yield (on an average) between the 60th and 65th day is the same as the decline in yield between the 80th and 85th days.

DIAGRAM 2.



The smoothed data were obtained by fitting a curve to the first five weekly averages and a straight line to the averages of the fifth and subsequent weeks by the method of least squares. Diagram 1 shows that the correspondence between the original and the smoothed data is most remarkable. It should be emphasised that the calculations were made from the records examined first : there was no selection or rejection of any material. From the formulae given in the following table the smoothed averages for the 44 cows and for the best and for the worst cows in the group may be calculated. In all cases the correspondence is good between the smoothed and original averages. The calculations were based on the formulae given for 31 cows, as the average yield of these animals was found by trial to approximate most closely to the Saorstát average.

—	Average yield in 45 weeks.	ESTIMATED YIELD OF MILK IN LBS.* PER DAY x WEEKS AFTER CALVING.	
		First 5 weeks.	Fifth and subsequent weeks.
	Gallons	Lbs.	Lbs.
22 Cows of highest yield	678	$25{\cdot}73 + 4{\cdot}156x - 0{\cdot}4450x^2$	$40{\cdot}75 - 0{\cdot}783x$
22 Cows of lowest yield	440	$17{\cdot}89 + 4{\cdot}389x - 0{\cdot}4641x^2$	$30{\cdot}75 - 0{\cdot}700x$
44 Cows	559	$21{\cdot}81 + 4{\cdot}273x - 0{\cdot}4545x^2$	$35{\cdot}75 - 0{\cdot}742x$
31 Cows of lowest yield	480	$19{\cdot}44 + 4{\cdot}244x - 0{\cdot}4597x^2$	$33{\cdot}06 - 0{\cdot}736x$

* One gallon of milk weighs approximately 10·3 lbs.

Although five weeks after calving has been taken as the period of increasing yield, there was some evidence that the period should be rather longer for cows of high yield and shorter for cows of low yield. For the purpose in view, however, it was not necessary to examine these points further.

It is clear from the formulae given in the last table that the lines of yield are nearly parallel for all classes of cows.

As a further deduction a close estimate of annual yield could be obtained from a knowledge of the date of calving and by making two readings, preferably at a fairly lengthy interval, of daily milk yields. From the monthly calving percentages and from the lactation formulae for 31 cows the following proportions of milk produced in each month were found. The proportions as determined from the sample of farmers' returns are also given.

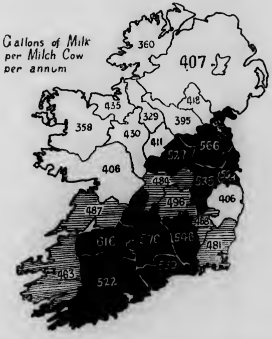
Percentages of milk produced in each month of the year in Saorstát Eireann.

Basis of Estimate.	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Calving Statistics	3·5	3·4	5·7	10·0	13·4	13·8	12·3	10·7	9·1	7·5	6·0	4·6	100
Sample returns (1927)	3·6	3·8	5·4	7·8	11·9	13·2	12·8	12·0	10·1	8·6	6·3	4·5	100

Making due allowance for the fact that in the calculation of the first row of figures it was necessary to use calving statistics of other years the correspondence between the two series of percentages is quite good. But it is of more moment from the present point of view to note that the proportions of milk produced in June and July differ by less than one-half of one per cent. by the two methods of estimation (26.1 per cent. in the first and 26.0 per cent. in the second); and it has been seen that the accuracy of the estimate of annual yield depends on the accuracy of the estimate of the proportion of milk produced in June and July. The seasonality of calving and of milk production as deduced by the two methods is shown on Diagram 2.

While the surplus of milk for sale during the winter months is small it will be seen that the total milk production in these months is quite considerable.

In the calculation of the proportions of milk produced in each month the lactation of an average cow of about 480 gallons yield was used. It may be added that the proportions as derived from cows with yields of as much as 10 per cent. in excess or in defect of 480 gallons do not differ to any marked extent from the proportions given in the foregoing table. Within these fairly wide limits it is the incidence of calving that determined the proportions of milk produced in each month.



County Milk Yields and Production.—From statistics collected by the Gárda Síochána at every farm in the country in June and July, 1928, the average number of quarts of milk per day in each county was calculated. The inquiry was repeated in the summer of 1929 and the average of the two figures for each county are shown in the following table. These figures in conjunction with the lactation formulae given in p. 24 and monthly calving statistics in each county for 1912-13 and 1917-18 were used to estimate the annual milk yield in each county. The same degree of accuracy cannot be claimed for the estimates of county yields and total milk production as for the corresponding estimates for the country as a whole. In particular, the yield for Limerick appears to be rather too high and the yields in Sligo and Wexford too low and future investigation along the same lines will show what adjustment, if any, should be made in these figures. The homogeneity of the geographical distribution of yields shows that broadly speaking the estimates are not far from the truth and can be used with confidence in most calculations.

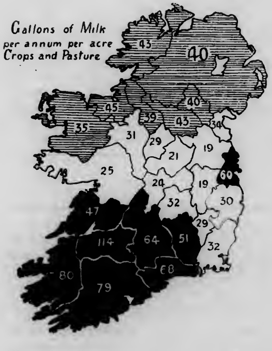
The following table shows the estimated annual county milk yields in 1926-27, total production of milk, and other comparative data :—

TABLE 10.

County.	Milk per cow per day in June–July, 1928–29* (complete enumeration) (1)	Average yield per milch cow per annum. (2)	Total milk production. (3)	Milk production per acre, crops and pasture. (4)
	Quarts.	Gallons.	Mill. Gals.	Gallons.
Carlow ...	6·9	468	5·6	29·0
Dublin ...	8·4	593	11·5	59·5
Kildare ...	7·6	535	7·1	12·2
Kilkenny ...	9·4	546	23·0	50·6
Laoighise ...	7·6	496	11·0	32·0
Longford ...	6·7	411	6·2	29·3
Louth ...	8·0	542	6·0	34·0
Meath ...	8·0	566	10·7	19·4
Offaly ...	7·6	484	8·4	23·8
Westmeath ...	7·7	527	7·8	21·3
Wexford ...	8·1	481	16·8	31·9
Wicklow ...	6·4	406	8·4	29·6
LEINSTER ...	7·9	507	122·5	30·4
Clare ...	8·8	487	28·2	47·0
Cork ...	9·1	522	108·3	79·2
Kerry ...	8·3	463	52·7	79·5
Limerick ...	11·2	616	68·1	113·8
Tipperary ...	10·4	576	55·3	63·6
Waterford ...	9·8	539	21·8	68·3
MUNSTER ...	9·5	534	334·4	75·7
Galway ...	6·5	406	21·7	25·2
Leitrim ...	5·9	329	10·8	38·8
Mayo ...	5·6	358	22·1	35·1
Roscommon ...	7·3	430	15·3	30·9
Sligo ...	8·0	435	13·3	45·3
CONNACHT	6·5	388	83·2	32·5
Cavan ...	7·0	395	17·3	42·7
Donegal ...	5·9	360	20·3	43·0
Monaghan ...	7·3	418	11·5	40·3
ULSTER (3 Counties).	6·6	384	49·1	42·2
SAORSTÁT EIREANN	8·4	487	589·2	48·4

* Simple Average of figures for day in June–July, 1928, and June–July, 1929.

The column of yields shows that there is a very considerable variation in the quality (or at least the yield) of dairy cattle throughout the country. The yields range from an average of 329 gallons in Leitrim to nearly double in Limerick—616 gallons. Limerick is the only county where the average yield exceeds 600 gallons and there are four counties in which it does not exceed 400 gallons—Leitrim, Mayo, Cavan and Donegal. A glance at the Map on page 25 will show that north of a line joining Louth with Clare all the yields are less than 450 gallons, whereas in only one of the seventeen counties south of the line are the yields less than 450 gallons. The average yield of milch cows in Northern Ireland in 1925 has been officially estimated at 407 gallons, so even though county estimates are not available it is clear that county yields in Northern Ireland are not very different from those in the bordering Saorstát counties.



The Munster counties (except Kerry and Clare) and Kilkenny form a compact group in the south in which yields exceed 500 gallons; as also do the counties of north Leinster (except Longford).

The production of milk per acre of crops and pasture, depending on the number of milch cows as well as on the yield per cow, varies from 12 gallons per acre in Kildare to 114 gallons in Limerick. The density of milk production in Limerick is nearly 50 per cent. higher than in any other Saorstát county. The Map shows that in the matter of milk production all Ireland may be partitioned fairly homogeneously into three zones: a midland zone comprising twelve counties of low milk density (under 35 gallons per acre), a northern zone of twelve counties in which the density lies between 35 and 45 gallons per acre and a compact block of seven southern counties in each of which the density is in excess of 45 gallons. It has been necessary to treat all Northern Ireland (in which the density of milk production averaged 40 gallons per acre of crops and pasture in 1925) as a single unit for the purpose of this calculation, as separate figures are not available for constituent counties.

The following table shows milk production and home consumption in provinces and in the seven counties in which there is a considerable surplus of milk for sale :—

——	Total milk production.	Consumed by Agriculturists or fed to live stock.	Surplus for sale.	Surplus as percentage of total production.
	Mil. gals.	Mil. gals.	Mil. gals.	per cent.
Kilkenny ...	23·0	11·1	11·9	52
Rest of Leinster	99·5	86·0	13·5	14
LEINSTER ...	122·5	97·1	25·4	21
Clare ...	28·2	14·2	14·0	50
Cork ...	108·3	35·7	72·6	67
Kerry ...	52·7	18·8	33·9	64
Limerick ...	68·1	14·7	53·4	78
Tipperary ...	55·3	20·3	35·0	63
Waterford ...	21·8	8·1	13·7	63
MUNSTER ...	334·4	111·8	222·6	67
CONNACHT ...	83·2	82·7	0·5	1
ULSTER (3 Counties)	49·1	41·5	7·6	15
SAORSTÁT EIREANN	589·2	333·1	256·1	43

The figures in the third column show that out of a total of 256.1 million gallons of milk produced for sale in 1926-27 no less than 222.6 million gallons, or 87 per cent. of the total, was produced in the province of Munster.

The figures indicate that there is practically no net surplus of milk in Connacht. The figures for three Leinster counties—Kildare, Meath and Westmeath—also indicate that these counties have no net surplus for sale. In each of the Munster counties there was a substantial surplus which was greatest in Cork (72.6 million gallons) and relatively greatest in Limerick (78 per cent. of total production).

The effect which the incidence of calving has on the seasonality of milk yield will be seen by comparing columns (1) and (2) of table 10. Although the daily yield of milk in June-July is 40 per cent. higher in Co. Limerick than in Co. Louth the annual yield is only 14 per cent. higher because calving in Louth is more evenly distributed throughout the year. Thus in Limerick 81.2 per cent. of the calves born in the year 1917-18 were born in the months April and May : in Louth the corresponding figure was only 37.9 per cent. In Kilkenny where 62.5 per cent. of the calves born in 1917-18 were born in the months March and April, compared with 34.4 per cent. in Meath, the annual milk yield per cow is greater in the latter county although the summer daily milk yield is less.

It should be emphasised that the statistics of daily yield per milch cow are based upon an enumeration extending to all the milch cows in the country. No element of estimate attaches to them.

Limerick and Denmark.—The similarity of milk yields and of the general milk policies in Denmark and Co. Limerick suggests a comparison between other agricultural statistics in the two places :—

——	—	Limerick. (1928).	Denmark. (1925-28)*
Annual yield per milch cows ...	Gals.	616	645
Production in June and July as a percentage of annual production ...	per cent.	28	20 (*a*)
Cows on farms sending milk to creameries as percentage of total cows	,,	97	96 (*b*)
Per 1,000 acres crops and pasture :–			
Workers in agriculture ...	No.	46 (*c*)	62 (*d*)
Ploughed land	Acres	45	612
Pigs	No.	102	514
Poultry	,,	1,255	2,551
Milch cows	,,	188	208
Other cattle	,,	245	193
Sheep	,,	31	32
Cattle under 1 year per 100 cows ...	,,	58	51

* Various dates. (*a*) Based on Exports to Great Britain. (*b*) 1914. (*c*) 1926. (*d*) 1921).

The number of milch cows, production of milk and number of sheep per 1,000 acres and the percentage of cows supplying milk to creameries are much the same in Limerick and Denmark. The low ratio of cattle under 1 year to milch cows shows that in both places it is the practice to dispose of calves in order to conserve the milk supply. But in Denmark, with a labour supply only 1⅓ times that of Limerick, 13½ times as much land is ploughed, there are five times as many pigs, twice as many poultry, and the milk supply is better maintained throughout the year.

Milk Fed to Live Stock.—It is estimated that 61.6 million gallons of whole milk was fed to live stock in the year 1926-27 and that of this 56.8 million gallons was fed to calves. From the Gárda inquiry (covering 5,000 farmers) it was ascertained that about 57 gallons of whole milk is fed to a calf during its rearing period. Applying this figure to the number of cattle under one year on 1st June, 1927, the foregoing estimate was obtained. From replies to a further query it was estimated that on an average whole milk is fed to calves for a period of 54 days after birth.

The following are the averages of milk fed to calves and of period of feeding in Counties arranged in order of magnitude of the former. Except for Carlow and Monaghan all averages are based on at least 100 replies :

——	Milk fed to each calf.	Days fed.	——	Milk fed to each calf.	Days fed.
COUNTIES :	Gallons.		COUNTIES :	Gallons.	
Mayo ...	110	95	Kilkenny ...	60	53
Dublin ...	89	69	Leitrim ...	56	51
Galway ...	87	76	Cavan ...	55	54
Sligo ...	85	60	Monaghan ...	48	41
Donegal ...	84	64	Clare ...	48	41
Westmeath ...	81	82	Tipperary ...	44	38
Roscommon ...	77	69	Waterford ...	42	45
Laoighise ...	72	67	Cork ...	35	41
Offaly ...	72	66	Kerry ...	34	37
Wicklow ...	71	69	Limerick ...	26	32
Meath ...	70	65			
Wexford ...	69	56	PROVINCES :		
Kildare ...	67	56	LEINSTER ...	69	64
Longford ...	64	72	MUNSTER ...	37	39
Louth ...	61	72	CONNACHT ...	87	75
Carlow ...	60	73	ULSTER (3 Counties)	65	57
			SAORSTÁT EIREANN ...	57	54

In the ten creamery counties* where farmers find a ready market for their milk the quantity of milk fed to a calf during its rearing period is considerably smaller than in the non-creamery counties. Thus nine of the last ten counties (all except Clare) in the list are creamery counties. The only exception is Sligo. The average is 42 gallons in the creamery counties and 76 gallons in the non-creamery counties. The six Munster counties are the lowest on the list and four Connacht counties are amongst the seven highest. The quantities of milk fed to calves in some counties are surprisingly high. They are, however, believed to be approximately accurate as particular care was devoted to this matter and two entirely distinct inquiries were made on the subject, one through the post direct from farmers, the other by personal inquiries made by the Gárdaí. In Northern Ireland it has been officially estimated that 40 gallons of milk is fed to a calf during its rearing period.

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* *i.e.*, those counties in which more than one-third of the cows are owned by farmers sending milk to creameries.

Although the average quantity of whole milk fed to calves in the Saorstát (57 gallons) is high it will be noticed from the Tables on page 17 that the percentage of total milk production fed to live stock is only 10.5 per cent. in the Saorstát as compared with 12.2 per cent. in Northern Ireland and 10.0 per cent. in Great Britain.

Milk and Butter Consumed by Persons.—The estimated human consumption of whole milk (as milk) was 89.2 million gallons of which 69.6 million gallons were consumed by agriculturists and 19.6 million gallons by the remainder of the population. The latter figure was based on an estimated consumption of 17 gallons per person per annum in Dublin—a rate which was presumed to apply to all towns and villages. The estimated consumption of milk on farms was established from returns received direct from a large sample of farmers in respect of a week's consumption in April and August, 1927 and January, 1928. The following table shows by provinces how this consumption varied by seasons on large and small farms :—

Consumption of whole milk (as milk) per person on farms.

Province.	PER PERSON PER WEEK.			PER PERSON PER ANNUM.		
	April, 1927.	August, 1927.	January 1928.	On farms of less than 50 acres.	On farms of 50 acres or over.	All farms.
	Pints.	Pints.	Pints.	Gallons.	Gallons.	Gallons.
Leinster ...	6·2	6·2	5·5	35	41	38
Munster ...	6·6	6·5	5·6	35	44	40
Connacht ...	6·0	6·3	5·5	37	39	38
Ulster (3 Counties).	6·3	6·3	5·1	36	41	37
SAORSTÁT EIREANN	6·3	6·3	5·5	36	42	38

There is an appreciable fluctuation in the consumption of milk on farms from summer to winter although it is not nearly so great as the seasonal fluctuation of production. It will also be seen that in each province the consumption of milk per person is greater on the larger holdings. The difference is most marked in Munster and least marked in Connacht. In Munster where milk is so plentiful the consumption on farms is not appreciably higher than in the other provinces because milk produced is easily marketed.

The consumption of butter on farms was estimated from returns received through the Gárda Síochána in January, 1929. Farmers were asked to state the numbers of persons in their household on January 19, 1929, and the number of pounds of butter eaten by these persons during the seven days ended 19th January, 1929, "or during some recent week." The following annual averages were calculated from the results obtained :—

Consumption of butter on farms per person per annum.

Province.	On farms of less than 50 acres.	On farms of 50 acres or over.	On all farms.
	lbs.	lbs.	lbs.
Leinster	45	49	47
Munster	43	50	46
Connacht	38	44	38
Ulster (3 Counties)	35	41	36
SAORSTÁT EIREANN	40	48	43

The estimated consumption of butter by agriculturists was 693,000 cwt., and by other persons in Saorstát Eireann 315,000 cwt. (including 45,000 cwt. imported)—an average of 31 lbs. per head compared with 43 lbs. for agriculturists. As a reference to the second next paragraph will show, even in Irish towns the consumption of butter is very high—far higher than in Great Britain, where the consumption is only 16 lbs. per head.

The difference between province and province is more marked in the consumption of butter than in the consumption of whole milk.

Check on Results.—As a rather striking confirmation of the general accuracy of the estimates of milk production and disposal (and some of the estimates, notably that of whole milk consumed on farms, are unexpectedly high) the correspondence between estimates of butter consumed by non-agriculturists in Saorstát Eireann may be adduced. The estimate given in this report was arrived at by deducting from the estimated total production of milk independent estimates of (*a*) whole milk consumed by live stock, (*b*) milk consumed in any form by agriculturists, (*c*) whole milk consumed by non-agriculturists together with exports of whole milk and the milk equivalent of butter and cream exported. An estimate of 270,000 cwt. of Saorstát produced butter was thus found which, added to the 45,000 cwt. of butter imported, gives a total consumption of butter by non-agriculturists in Saorstát Eireann of 315,000 cwt. per annum, or 31 lbs. per head, which agrees very well with the average of 33 lbs. obtained at the June, 1922, Cost of Living inquiry.

Valuation of Butter and Milk.—The value of creamery butter to farmers was taken as the value of the milk they sold to creameries. The average price was 6.04d. per gallon (separated milk returned). Farmers' butter was valued at the market price of butter in 1926-27—131/2 per cwt. Milk consumed by farmers and their families was valued at 6d. per gallon. Milk sold in the four county boroughs was valued at 12.1d. per gallon, an average derived from prices given in the Report of the Tribunal on Prices. Milk sold in the smaller towns was valued at a retail price of 20.3d. per gallon; it is presumed that the bulk of milk sold in these towns is retailed by the producers themselves. The exceptional variation in the price of milk depending on the place where and the purpose for which it is sold will be noted.

III.—PRODUCTION OF LIVE STOCK AND LIVE STOCK PRODUCTS, OTHER THAN MILK.

Horses.—The output of horse-breeding establishments as well as of farms is taken into account. Output is made up of (1) exports, which constitute the bulk of output and (2) horses sold for non-agricultural uses in Saorstát Eireann. The exports of horses *sold* during the twelve months ended May 31st, 1927, were 11,128, valued at £1,425,000, and the number of purchased horses imported was 2,435 valued at £393,000; it was presumed that practically all animals imported went to breeding establishments. Net exports were therefore 8,693 valued at £1,032,000 which is 84 per cent. of total estimated output. The estimate of output for home use was based on (*a*) the average number of non-agricultural horses in Saorstát Eireann in 1926-27, available from Agricultural Statistics, (*b*) estimates of the number of years worked by these animals, and (*c*) estimates of annual rates of mortality. The following were the data used and the results obtained :—

Horses used for	Average number, 1926–27.	Mortality per cent. per annum.	Average time worked.	Number required annually for replacement (deduced from previous columns.)
	No.	Per cent.	Years.	No.
Traffic and manufacture ...	20,633	7	11½	2,555
Amusement and recreation ...	25,486	5	10	3,175

From returns received from agricultural instructors the average price of horses used for traffic and manufactures was calculated at £26.10 and for amusement and recreation at £48.18, so that the gross value of horses purchased for home use was £223,000. Old horses repurchased for farm use were estimated roughly at 2,000 and valued at £20,000. The estimated net value of horses purchased for home use (other than in agriculture) was therefore £203,000.

The value of output, made up of net exports (£1,032,000) together with horses purchased for non-agricultural purposes in Saorstát Eireann (£203,000) less the decrease in the value of horses on farms between 1st June, 1926 and 1st June, 1927 (£1,000) was £1,234,000.

Cattle and Sheep.—Output consists of (1) exports and (2) animals slaughtered for consumption in Saorstát Eireann. The inquiry into home consumption was based on the Statistics (Slaughter of Animals for Food) Order, 1926, made under the Statistics Act (1926), which required each butcher in the Saorstát to state the number and dressed weight of cattle, calves, sheep, lambs and pigs slaughtered for sale as fresh meat during a specified week in each month from September, 1926, to August, 1927, and during Christmas week, 1926. From these returns the annual slaughterings given in detail in tables 16 and 17 were established.

To find the consumption of beef and veal and of mutton and lamb by non-agriculturists the consumption per head was calculated for all towns of over 10,000 population and the resulting per capita rates applied to the non-agricultural population.

The following tables show in detail the number and value of each item of output. The values shown are the estimated values at farms :

Output of Cattle and Calves, 1926-27.

	No.	Value at farms.
		£
Exports :—		
Fat cattle	**262,000**	**5,227,000**
Store cattle (including strippers and dry cows)	**309,000**	**5,070,000**
Milch Cows	**36,000**	**753,000**
Springers	**10,000**	**200,000**
Calves	**24,000**	**175,000**
Fresh beef and veal	**1,000**	**29,000**
(*a*) Total exports	**642,000**	**11,454,000**
(*b*) Slaughtered in Saorstát Eireann ...	**123,000**	**1,874,000**
(*c*) Imports	**12,000**	**183,000**
(*d*) Increase in herds	**100,000**	**664,000**
Output : (*a*) + (*b*) — (*c*) + (*d*) ...	**853,000**	**13,809,000**

Output of Sheep and Lambs, 1926-27.

	No.	Value at farms.
		£
Exports :—		
Fat sheep	**208,000**	**521,000**
Store sheep	**19,000**	**34,000**
Lambs	**280,000**	**573,000**
Mutton and lamb	**2,000**	**5,000**
(*a*) Total exports	**509,000**	**1,133,000**
(*b*) Slaughtered in Saorstát Eireann ...	**504,000**	**1,518,000**
(*c*) Imports	**8,000**	**17,000**
(*d*) Increase in stock	**117,000**	**224,000**
Output : (*a*) + (*b*) — (*c*) + (*d*) ...	**1,122,000**	**2,858,000**

No account was taken of cattle and sheep slaughtered for consumption on farms. It is probable that the total of such killings is comparatively small.

Pigs.—Output consists of (1) exports of live pigs and of pork, (2) pigs slaughtered for curing, (3) pigs purchased by pork butchers and (4) pigs killed for consumption on farms. The following table shows the number and value of each of these items of output.

Output of Pigs, 1926-27.

	No.	Value at farms.
		£
Exports :—		
Fat pigs	**249,000**	**1,864,000**
Store pigs	**60,000**	**119,000**
Fresh Pork :—		
To Northern Ireland	**93,000**	**702,000**
To Great Britain	**104,000**	**404,000**
(*a*) Total exports	**506,000**	**3,089,000**
(*b*) Purchased for curing	**643,000**	**4,013,000**
(*c*) Purchased by pork butchers ...	**67,000**	**380,000**
(*d*) Slaughtered and consumed on farms* ...	**126,000**	**806,000**
(*e*) Imports	**5,000**	**17,000**
(*f*) Increase in stock	**294,000**	**803,000**
Output : (*a*) + (*b*) + (*c*) + (*d*) — (*e*) + (*f*)	**1,631,000**	**9,074,000**

*** Twelve months ended 31st May, 1928.**

In the following table the annual output of pigs is redistributed on the basis of final consumption :

	No.	Value at farms.
		£
Consumed by the agricultural community	228,000	1,439,000
Consumed by others in Saorstát Eireann	233,000	1,416,000
Exported	876,000	5,416,000
Increase in stock	294,000	803,000
Output	1,631,000	9,074,000

Poultry.—The output of poultry was more difficult to estimate than any other agricultural product. The method adopted was as follows : From the ordinary agricultural statistics the number of poultry (*a*) born in 1926 and (*b*) born before 1926 (which were presumably all stock birds) was known as at 1st June, 1926, for each of the four classes of poultry, turkeys, geese, ducks and ordinary fowl. From returns obtained direct from farmers the *proportion* of chickens hatched before and after 1st June in a calendar year was ascertained and therefore, making a reasonable allowance for mortality amongst chickens, the number of young birds *produced* each year was known. But only part of this production is *output* for sale or for consumption on farms, as large numbers of fowl are required for the replacement of stock birds. The estimate of the numbers required for replacement annually and the estimate of the numbers of stock birds available for slaughter were based on the number of years which stock birds are kept and on the mortality of stock birds. Mortality amongst stock birds was estimated from returns received from Poultry Instructors.

From returns collected by the Gárda Síochána further statistics were obtained showing the consumption of poultry per head in farm households in 1928. The following table shows the consumption of poultry on farms per 1,000 agriculturists :

Estimated consumption of poultry on farms per 1,000 agriculturists during the year 1928.

——	Turkeys.	Geese.	Ducks.	Ordinary Fowl.
	No.	No.	No.	No.
On farms less than 50 acres	197	601	672	3,177
On farms of 50 acres or over	325	884	873	3,823
All farms (weighted average)	227	669	707	3,367

As might be expected, the difference between the average consumption on large and small farms of valuable fowl like turkeys is very marked.

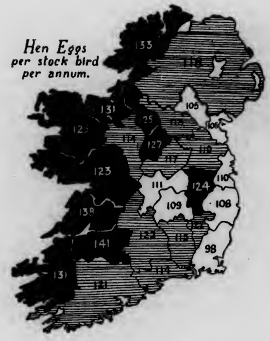
The following were the prices per head used in valuing output : turkeys 14/1, geese 6/3, ducks 2/5, chickens 3/1, old fowl 2/3½, which are official prices at markets.

It is probable that that part of output which is consumed on farms is somewhat overvalued as it is to be expected that the inferior birds are consumed at home. It was not, however, found practicable to devise any means for adjusting market prices accordingly.

Eggs.—The method employed in the estimation of the production of hen eggs was similar to that by which the yield of milch cows was determined. From returns received from a large number of farmers the following percentages were obtained :—

Percentage of hen eggs laid in each month of 1927 :

	Per cent.		Per cent.
January	5·3	July	10·0
February	7·0	August	8·2
March	10·7	September	7·9
April	12·8	October	6·3
May	12·2	November	4·5
June	11·5	December	3·6
		Year	100·0



At the collection of the ordinary agricultural statistics the number of hen eggs produced on all farms in the country on a single day in the summer of 1928 was determined. The average date of collection of returns was June 22nd, 1928. Annual production was deduced from these statistics and from the seasonal data given in the preceding table.

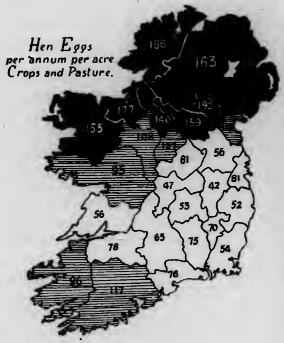
The estimated number of hen eggs produced in the twelve months ended May 31st, 1927, was 1,166 million equivalent to an annual yield of 125 eggs per laying bird or 121 eggs per stock bird. About 16 million were required for hatching purposes and hence the annual output of hen eggs is estimated at 1,150 million.

The following table shows the estimated production of hen eggs in Saorstát counties in 1926-27 :

TABLE 11—HEN EGGS.

County and Province.	Eggs per stock bird per annum.	Total production, 1926-27.	Eggs per acre, crops and pasture.	County and Province.	Eggs per stock bird per annum.	Total production, 1926-27.	Eggs per acre, crops and pasture.
		Millions				Millions	
Carlow ...	122	13	70	Clare ...	138	34	56
Dublin ...	110	16	81	Cork ...	121	160	117
Kildare ...	124	15	42	Kerry ...	131	64	96
Kilkenny ...	115	34	75	Limerick ...	141	47	78
Laoighise ...	109	18	53	Tipperary ...	122	57	65
Longford ...	127	27	127	Waterford ...	114	24	76
Louth ...	106	21	119				
Meath ...	119	31	56	MUNSTER ...	126	386	87
Offaly ...	111	17	47				
Westmeath ...	117	22	61	Galway ...	123	82	95
Wexford ...	98	28	54	Leitrim ...	125	39	140
Wicklow ...	108	15	52	Mayo ...	125	98	155
				Roscommon	114	54	108
LEINSTER ...	113	257	64	Sligo ...	131	52	177
				CONNACHT ...	123	325	127
Cavan ...	113	64	159				
Donegal ...	133	79	166				
Monaghan ...	105	55	192	SAORSTÁT EIREANN	121	1,166	96
ULSTER (3 Cos.)	117	198	170				

It will be seen from the Map on p. 37 that yields *per hen* along the western seaboard are over the average for the Saorstát. Production *per* acre is highest in Connacht and the three Ulster counties.



The yield of hen eggs in 1925 in Northern Ireland has been officially estimated at 118 per laying bird and total production of hen eggs at 400 million. Production per acre crops and pasture was 163.

The annual yield per laying bird in all Ireland was about 123 eggs compared with an estimate of 100 in 1912-13. Total annual production of hen eggs in all Ireland increased from 1,107 million in 1912-13 to 1,566 million in 1926-27.

Based on an estimated yield of 110 eggs per laying bird or 100 eggs per stock bird per annum the output of duck eggs in Saorstát Eireann in 1926-27 was 145 million.

The following shows the manner of disposal of the annual output of hen and duck eggs :

	Quantity Gt. hunds.
Consumed by the agricultural community ...	4,566,000
Consumed by others in Saorstát Eireann ...	1,500,000
Exported	4,725,000
Total	10,791,000

The foregoing items were ascertained in the following manner. Exports were known from trade statistics and hence total home consumption (estimated output less exports). The proportion of home consumption which was consumed by the agricultural community was calculated from the monthly percentages of production given on p. 37 and from the corresponding percentages of sales off farms (deduced from exports) on the hypothesis that consumption on farms was much the same in each month of the year. The resulting quantities of sales off farms and of consumption on farms were found to agree quite well with figures obtained at the Gárda inquiry on the one hand and at the June, 1922, Cost of Living inquiry (for consumption in non-agricultural families) on the other. The following are provincial averages obtained from the Gárda inquiry :—

Consumption of eggs per 100 persons on farms during week ended 19th January, 1929.

——	On farms of less than 50 acres.	On farms of 50 acres or over.	On all farms (weighted averages).
	No.	No.	No.
Leinster	530	563	544
Munster	561	600	578
Connacht	536	629	549
Ulster (3 Counties)	448	492	456
SAORSTÁT EIREANN ...	530	582	544

Wool.—Output consists of (1) exports in 1926-27 and (2) purchases in 1926 by Saorstát wool manufacturers of wool produced in Saorstát Eireann as recorded at the Census of Industrial Production.

"Fallen" Cattle Hides.—The estimate of output was based on the estimated mortality of cattle from disease or accident in 1926-27, which was deduced from (*a*) the increase in cattle between

1926 and 1927, (*b*) estimated birth of calves, and (*c*) net sales or output of cattle. The mortality was estimated at 107,000 (or 2.7 per cent. of the average cattle population) and each hide was valued at £1.

Feathers.—From returns received from Poultry Instructors estimates were made of the weight of feathers plucked from each kind of fowl and of the price of feathers per lb. From these averages and from the estimated number of poultry killed, the output of feathers was calculated.

IV.—PRODUCTION OF CROPS AND TURF.

Production.—Crop production statistics are available annually. They are based on the complete enumeration of areas under crops on 1st June of each year and on sample estimates of the yield of each crop per acre. These estimates are made from returns received from the Gárda Síochána who are instructed to furnish (if possible) estimates made by six different farmers in respect of each crop in each District Electoral Division. There are nearly 3,000 District Electoral Divisions in the Saorstát, so that the samples on which the estimates are based are large.

Valuation of Crops Fed to Live Stock.—Potatoes, cabbages and wheat are consumed partly by persons and partly by live stock and only the human food prices were available. The problem arose of valuing the parts of crops which were fed to live stock. It was found that the price *per unit of starch* was fairly constant in many different types of animal foodstuffs. Thus the price of 100 lbs. of starch in oats was 11/7, in feeding barley 10/6, in turnips 11/3, in mangels 12/8, in hay 10/11 and in maize (retail) 10/6. A simple average of all except the last gave a price of 11/5 per starch ton in all animal feed, and this price was applied to the starch content of one cwt. of potatoes, cabbages and wheat.

Wheat.—Output was derived from the Census of Industrial Production which showed that 55,000 cwt. of Saorstát grown wheat (out of total purchases of 5,465,000 cwt.) was purchased by Saorstát millers in 1926 and that wheat (of undefined origin) milled on commission was 97,000 cwt. All the latter was presumed to be Saorstát-grown for consumption in farm households. This output of 152,000 cwt. was presumed to have been grown in Saorstát Eireann in 1925. As the total production increased from 402,000 cwt. in 1925 to 619,000 cwt. in 1926 these items of output were increased *pro rata.* Deducting the resulting estimates, together with exports and home-grown seed, it was found that 313,000 cwt. out of the 619,000 cwt. grown in 1926 was fed to live stock, or 51 per cent. of total production. Wheat fed to live stock was valued at 9/6 per cwt. and all other production at 12/2 per cwt.

Oats.—Output consists of (1) oats fed to horses other than those in agriculture, (2) purchases by grain mills and (3) exports. To estimate (1): from returns received from agricultural instructors it was estimated that the 20,633 horses used for traffic or manufacture consumed 38 cwt. per head per annum and the 25,486 horses used for amusement or recreation 26 cwt. per head per annum, or a total of 1,447,000 cwt. But as imports of oats (other than for seed) amounted to 133,000 cwt., of which 20,000 cwt. was used in Grain Mills, output at (1) was estimated at the difference—1,334,000 cwt. Output at (2)—obtained from the Census of Industrial Production—is given in table 5 and output at (3)—exports—in table 4. Oats was valued at 7/9 per cwt.

Barley.—Output consists of (1) Saorstát barley purchased by malting establishments and (2) exports of grain. With regard to (1) the quantity of malt available for brewing and distilling in Saorstát Eireann in the year ended August 31st, 1926, published in Preliminary Report No. 2 of the Census of Industrial Production was the basis of estimate. This figure was adjusted to the twelve months ended August 31st, 1927, by taking into account the known production of beer and spirits in the calendar years 1926 and 1927. As the imports, exports and re-exports of malt and barley during the period were known it was possible to estimate the quantity of Saorstát barley purchased by malting establishments at about 1,829,000 cwt. or about 64 per cent. of total production during the twelve months ended August, 1927. (In this calculation it is assumed that the whole of the 1926 output was either malted or exported in 1926-27). Exports of barley as grain amounted to 427,000 cwt. or about 15 per cent. and barley fed to live stock to 394,000 cwt. or about 14 per cent. of total production. Feeding and malting barley were valued at 8/- per cwt.

Potatoes.—Output consists of (1) potatoes consumed by persons in Saorstát Eireann and (2) exports. Per head consumption by non-agriculturists was derived from figures published in the Report of the Tribunal on Prices (p. 195), which showed that 26,210 tons of potatoes were consumed by the population of Dublin in 1926 or an average of 1.7 cwt. per head per annum. This average was in fair agreement with the figure obtained at the Cost of Living inquiry of June, 1922. Consumption by the agricultural community was estimated from the inquiry amongst farmers at 7.0 cwt. per head per annum. This may be greater than the quantity actually *eaten* by persons. It may rather represent the quantity *cooked* for household purposes, the surplus being fed to live stock. The provincial averages were as follows:

	Consumption of potatoes per head per annum by agriculturists. cwt.
Leinster	6·8
Munster	6·8
Connacht	7·3
Ulster (3 Counties) ...	7·2
SAORSTÁT EIREANN	7·0

It will be noted that the consumption per head of potatoes is four times as great in the country as in the towns. The 898,000 tons of potatoes consumed by live stock on farms is valued at 45/7 per ton obtained from the price of the starch content; all other potatoes at 102/3.

Cabbage.—From the figures also given in the Report of the Tribunal on Prices it was calculated that the consumption of cabbage in Dublin amounted to 0.55 cwt. per head per annum, which was presumed to apply to the non-agricultural community. Consumption by non-agriculturists was assumed to be 1½ cwt. per head per annum.

Hay.—Output consists of (1) supplies fed to horses other than those in agriculture and (2) exports. From returns received from agricultural instructors it was estimated that the 20,633 horses used for traffic or manufactures consumed 58 cwt. per head per annum and the 25,486 horses used for amusement or recreation 37 cwt. per head per annum, or a total of 107,000 tons, which is 2 per cent. of total production. Hay was valued at 57/10 per ton.

Fruit.—The estimated production of fruit is based on the area under fruit in 1926—7,515 acres. Horticultural Instructors of the Department of Agriculture were asked to state the average value of the annual output of an acre of land under fruit, and from replies received an average of £62 per acre was obtained.

Timber.—Output of timber was based on Census of Industrial Production and export statistics. No information was obtainable with regard to timber used as fuel.

Turf.—Estimate of output was based on 1918 statistics of the number of farms on which turf was the only fuel used. The following table shows the details of the calculation :—

TABLE 12.

—	Farms using turf only on 1st June, 1918. (1)	Drawn from bog in 1928—average per farm. (2)	Estimated production [(1) x (2)] (3)	Average price per ton delivered in local market 1928. (4)	Estimated value of production (5)
	No.	tons.	tons.	shillings.	£
Leinster ...	41,430	29·9	1,239,000	18·8	1,164,000
Munster ...	65,335	24·3	1,588,000	19·5	1,548,000
Connacht ...	104,139	24·4	2,541,000	18·3	2,325,000
Ulster (3 Counties).	42,186	24·4	1,029,000	17·5	901,000
SAORSTÁT EIREANN	253,090	25·3	6,397,000	18·6	5,938,000

The averages in columns (2) and (4) were derived from the special inquiry made by the Gárda Síochána.

Grass Seed.—The production of grass seed is practically confined to 4 Northern counties—Louth, Cavan, Donegal and Monaghan. The production is based on an estimated area of 16,000 acres under hay harvested for seed. Of this 13,000 acres were in Monaghan. The yield and price of the crop were estimated at 5.9 cwt. per acre and 21/8 per cwt.

Other Seeds.—In order to estimate the part of each crop which is used for further agricultural production in the form of seed, returns received from agricultural instructors and the Gárda Síochána were used. From these returns, suitably weighted, the following averages were obtained :—

Quantity of seed sown per statute acre.

Wheat	**16·8 stones.**
Oats	**18·8 „**
Barley	**14·6 „**
Rye	**16·3 „**
Potatoes	**16·1 cwt.**

These rates were applied to the areas under crops in 1927 and, on deducting imports of seed, the quantities of home-grown seed used were obtained.

Statistics Branch,
Department of Industry & Commerce,
Dublin.

March, 1930.

V.—APPENDIX TABLES.

Table 13—Quantity, value and manner of disposal of output of live stock and live stock produce. Saorstát Eireann, 1926-27.

Notes : (*a*) Estimates of disposal are based on final consumption. For example, pigs exported include pigs in bacon exported as well as live and dead pigs exported, all valued at farmers' prices.

(*b*) For further details regarding disposal see tables 2, 3, 4, 5 and 6.

Product.	Unit of Quantity	Total Output		Consumed in Saorstát Eireann		Exports and additions to stock.	
		Quantity	Value	Quantity	Value	Quantity	Value
		000's	£000's	000's	£000's	000's	£000's
Horses ...	No.	14	1,234	4	203	10	1,031
Cattle and Calves	,,	854	13,809	122	1,853	732‡	11,956‡
Milk* ...	gals.	89,000	3,161	89,000	3,141	†	20
Cream* ...	,,	825	312	64	24	761	288
Butter ...	cwts.	1,491	9,845	963	6,342	528	3,503
Buttermilk, separated and skim milk ...	gals.	72,000	375	72,000	370	†	5
Sheep and Lambs	No.	1,122	2,858	504	1,518	618‡	1,340‡
Wool ...	lbs.	14,459	685	978	46	13,481	639
" Fallen " Cattle hides ...	No.	107	108	–	–	107	108
Pigs ...	,,	1,631	9,074	461	2,855	1,170‡	6,219‡
Poultry :—							
Turkeys ...	No.	800	568	400	280	400	288
Geese ...	,,	1,100	340	950	295	150	45
Ducks ...	,,	1,250	155	1,175	145	75	10
Ordinary Fowl	,,	9,050	1,264	6,100	860	2,950	404
Eggs :—							
Hen ...	120's	9,583	5,910	5,258	3,243	4,325	2,667
Duck ...	,,	1,208	780	808	522	400	258
Feathers ...	lbs.	2,900	61	1,100	23	1,800	38
Honey ...	,,	450	16	425	15	25	1
Total live stock and live stock products ...	–	–	50,555	–	21,735	–	28,820

* Consumed or exported as such. The total quantity of whole milk produced is estimated at 589,000,000 gallons of which 62,000,000 gallons was fed to calves, 89,000,000 gallons consumed or exported as milk, and 438,000,000 gallons made into butter and cream on farm or at creameries.

† Less than 500,000 gallons.

‡ Exports less store imports plus additions to stock.

Table 14—Production, output and manner of disposal of crops and turf produced in Saorstát Eireann in 1926. Quantities.

Notes : (*a*) Estimates of disposal are based on final consumption. For example, barley exported includes barley in beer and spirits exported as well as barley in grain.

(*b*) For further detail regarding disposal see tables 2, 3, 4, 5 and 6.

Crop.	Unit of quantity	Estimated total production	Sold by the agricultural community or consumed in farm households.			Used for further agricultural production.	
			Total output	Consumed in Saorstát Eireann	Exported	As seed	As food for live stock on farm
		000's	000's	000's	000's	000's	000's
Wheat ...	cwt.	619	233	232	1	73	313
Oats ...	,,	12,775	2,553	1,662	891	1,386	8,836
Barley ...	,,	2,868	2,256	657	1,599	218	394
Rye ...	,,	104	–	–	–	12	92
Beans and Peas	,,	15	–	–	–	1	14
Turnips ...	tons	3,735	37	37	–	–	3,698
Mangels ...	,,	1,685	–	–	–	–	1,685
Sugar Beet ...	,,	86	86	86	–	–	–
Potatoes ...	,,	1,932	741	717	24	293	898
Parsnips ...	,,	4	4	4	–	–	–
Carrots ...	,,	8	8	8	–	–	–
Cabbage ...	,,	334	167	167	–	–	167
Vetches ...	,,	20	–	–	–	–	20
Rape ...	,,	37	–	–	–	–	37
Other Green Crops.	Value £	230	102	100	2	–	128
Flax ...	cwt.	23	23	–	23	–	–
Tow ...	,,	5	5	–	5	–	–
Hay ...	tons	5,234	109	107	2	–	5,125
Straw ...	,,	1,514	8	8	–	–	1,506
Grass Seed ...	cwt.	92	40	–	40	52	–
Fruit ...	Value £	466	466	450	16	–	–
Timber (other than fuel).	loads	72	72	55	17	–	–
Turf ...	tons	6,397	6,397	6,397	–	–	–

Table 15—Production, output and manner of disposal of crops and turf produced in Saorstát Eireann in 1926. Values.

Note : See notes to table 14.

Crop	Estimated total production	Sold by the agricultural community or consumed in farm households			Used for further agricultural production.	
		Total output	Consumed in Saorstát Eireann	Exported	As seed	As food for live stock on farm.
	£000's	£000's	£000's	£000's	£000's	£000's
Wheat	335	142	141	1	44	149
Oats	4,950	989	644	345	537	3,424
Barley	1,147	902	263	639	87	158
Rye	47	–	–	–	5	42
Beans and Peas ...	6	–	–	–	*	6
Turnips	3,547	49	49	–	–	3,498
Mangels	1,622	–	–	–	–	1,622
Sugar Beet ...	259	259	259	–	–	–
Potatoes	7,331	3,786	3,667	119	1,498	2,047
Parsnips	31	31	31	–	–	–
Carrots	52	52	52	–	–	–
Cabbage ...	1,061	920	920	–	–	141
Vetches	19	–	–	–	–	19
Rape	33	–	–	–	–	33
Other Green Crops	230	102	100	2	–	128
Flax	82	82	–	82	–	–
Tow	2	2	–	2	–	–
Hay	15,134	316	309	7	–	14,818
Straw	3,190	17	16	1	–	3,173
Grass Seed ...	99	43	–	43	56	–
Fruit	466	466	450	16	–	–
Timber (other than fuel).	106	106	66	40	–	–
Turf	5,938	5,938	5,938	–	–	–
TOTAL CROPS AND TURF ...	45,687	14,202	12,905	1,297	2,227	29,258

* Less than £500.

Table 16—Number and dressed weight of Cattle, Calves, Sheep and Lambs slaughtered during the twelve months ended 31st August, 1927. Aggregate of Urban and of Rural Districts in each County.

—	CATTLE		CALVES		SHEEP		LAMBS		CATTLE, CALVES, SHEEP AND LAMBS	
	No.	Dressed Weight.	No.	Dressed Weight.	No.	Dressed Weight.	No.	Dressed Weight.	Total Dressed Weight	Weight per head of Population
		cwt.		cwt.		cwt.		cwt.	cwt.	lbs.
CARLOW :	1,242	6,179	4	3	5,543	3,496	808	298	9,976	32·4
Urban	720	3,577	—	—	2,610	1,567	370	130	5,274	
Rural	522	2,602	4	3	2,933	1,929	438	168	4,702	
DUBLIN :	39,999	213,639	783	1,069	128,954	85,908	37,652	14,441	315,057	69·8
Urban	36,728	196,939	779	1,062	119,962	80,096	35,088	13,486	291,583	
Rural	3,271	16,700	4	7	8,992	5,812	2,564	955	23,474	
KILDARE :	2,565	12,510	—	—	7,050	4,349	1,244	493	17,352	33·4
Urban	819	3,856	—	—	2,181	1,324	322	127	5,307	
Rural	1,746	8,654	—	—	4,869	3,025	922	366	12,045	
KILKENNY :	1,735	8,424	4	6	6,634	4,433	894	425	13,288	21·0
Urban	703	3,559	—	—	2,368	1,652	310	174	5,385	
Rural	1,032	4,865	4	6	4,266	2,781	584	251	7,903	
LAOIGHIS :	2,026	10,096	—	—	5,661	3,939	715	307	14,342	31·1
Urban	—	—	—	—	—	—	—	—	—	
Rural	2,026	10,096	—	—	5,661	3,939	715	307	14,342	
LONGFORD :	1,216	5,945	—	—	2,712	1,971	196	91	8,007	22·5
Urban	818	4,023	—	—	1,791	1,268	145	70	5,361	
Rural	398	1,922	—	—	921	703	51	21	2,646	
LOUTH :	3,444	17,699	—	—	8,282	4,725	2,271	873	23,297	41·6
Urban	2,684	13,948	—	—	6,168	3,550	1,629	644	18,142	
Rural	760	3,751	—	—	2,114	1,175	642	229	5,155	

Table 16 (contd.)—Number and dressed weight of Cattle, Calves, Sheep and Lambs slaughtered during the twelve months ended 31st August, 1927. Aggregate of Urban and of Rural Districts in each County.

—	Cattle.		Calves.		Sheep		Lambs.		Cattle, Calves, Sheep and Lambs.	
	No.	Dressed Weight.	No.	Dressed Weight.	No.	Dressed Weight.	No.	Dressed Weight.	Total Dressed Weight.	Weight per head of Population.
		cwt.		cwt.		cwt.		cwt.	cwt.	lbs.
Meath :	1,756	8,898	4	17	6,236	4,137	828	403	13,455	24·0
Urban	953	4,812	—	—	2,810	1,889	500	270	6,971	
Rural	803	4,086	4	17	3,426	2,248	328	133	6,484	
Offaly :	1,763	8,520	4	4	5,263	3,776	716	302	12,602	26·9
Urban	1,108	5,503	4	4	2,842	2,018	550	230	7,755	
Rural	655	3,017	—	—	2,421	1,758	166	72	4,847	
Westmeath :	2,391	11,408	—	—	7,563	5,514	765	330	17,252	34·0
Urban ...	865	4,143	—	—	2,464	1,736	144	66	5,945	
Rural	1,526	7,265	—	—	5,099	3,778	621	264	11,307	
Wexford :	4,510	22,461	47	52	9,975	6,385	2,790	1,129	30,027	35·1
Urban	3,522	17,792	47	52	7,256	4,642	2,168	859	23,345	
Rural	988	4,669	—	—	2,719	1,743	622	270	6,682	
Wicklow :	3,145	15,644	22	32	11,793	6,910	3,995	1,436	24,022	46·7
Urban	2,021	10,063	9	11	5,174	3,072	1,953	688	13,834	
Rural	1,124	5,581	13	21	6,619	3,838	2,042	748	10,188	
Leinster :	65,792	341,423	868	1,183	205,666	135,543	52,874	20,528	498,677	48·6
Urban	50,941	268,215	839	1,129	155,626	102,814	43,179	16,744	388,902	
Rural	14,851	73,208	29	54	50,040	32,729	9,695	3,784	109,775	
Clare :	1,914	9,098	4	3	9,574	7,000	941	421	16,522	19·4
Urban	877	4,322	4	3	3,588	2,537	157	68	6,930	
Rural	1,037	4,776	—	—	5,986	4,463	784	353	9,592	
Cork :	19,508	84,405	1,960	2,488	71,574	39,400	14,934	6,094	132,387	40·5
Urban	13,751	61,023	1,907	2,446	54,542	29,711	11,752	4,735	97,915	
Rural	5,757	23,382	53	42	17,032	9,689	3,182	1,359	34,472	
Kerry :	3,925	15,897	165	148	19,988	9,908	2,840	958	26,911	20·2
Urban	2,096	8,742	93	84	8,507	4,602	1,098	397	13,825	
Rural	1,829	7,155	72	64	11,481	5,306	1,742	561	13,086	
Limerick :	4,645	22,091	276	268	17,915	12,706	1,095	486	35,551	28·3
Urban	2,520	12,422	55	24	9,907	6,988	636	286	19,720	
Rural	2,125	9,669	221	244	8,008	5,718	459	200	15,831	
Tipperary :	4,429	20,777	9	21	17,332	11,427	1,722	712	32,937	26·1
Urban	2,824	13,395	—	—	11,248	7,399	1,216	515	21,309	
Rural	1,605	7,382	9	21	6,084	4,028	506	197	11,628	
Waterford :	3,878	18,585	17	15	11,209	6,935	2,199	966	26,501	37·8
Urban	3,156	15,206	4	4	8,492	5,291	1,598	670	21,171	
Rural	722	3,379	13	11	2,717	1,644	601	296	5,330	
Munster :	38,299	170,853	2,431	2,943	147,592	87,376	23,731	9,637	270,809	31·3
Urban	25,224	115,110	2,063	2,561	96,284	56,528	16,457	6,671	180,870	
Rural	13,075	55,743	368	382	51,308	30,848	7,274	2,966	89,939	
Galway :	2,599	12,557	—	—	18,925	11,982	1,376	570	25,109	16·6
Urban	1,526	7,671	—	—	7,155	4,923	892	379	12,973	
Rural	1,073	4,886	—	—	11,770	7,059	484	191	12,136	
Leitrim :	1,070	5,050	17	23	2,620	1,830	324	133	7,036	14·1
Urban	—	—	—	—	—	—	—	—	—	
Rural	1,070	5,050	17	23	2,620	1,830	324	133	7,036	
Mayo :	2,325	10,204	—	—	16,614	9,791	1,330	483	20,478	13·3
Urban	1,243	5,501	—	—	6,931	4,153	473	174	9,828	
Rural	1,082	4,703	—	—	9,683	5,638	857	309	10,650	
Roscommon :	774	3,753	4	6	4,315	3,158	472	219	7,136	9·5
Urban	—	—	—	—	—	—	—	—	—	
Rural	774	3,753	4	6	4,315	3,158	472	219	7,136	

Table 16 (contd.)—Number and dressed weight of Cattle, Calves, Sheep and Lambs slaughtered during the twelve months ended 31st August, 1927. Aggregate of Urban and of Rural Districts in each County.

—	CATTLE.		CALVES.		SHEEP		LAMBS.		CATTLE, CALVES, SHEEP AND LAMBS.	
	No.	Dressed Weight.	No.	Dressed Weight.	No.	Dressed Weight.	No.	Dressed Weight.	Total Dressed Weight.	Weight per head of Population.
		cwt.		cwt.		cwt.		cwt.	cwt.	lbs.
SLIGO :	1,593	7,956	10	25	4,816	3,508	987	429	11,918	18·7
Urban	931	4,850	10	25	1,973	1,370	438	187	6,432	
Rural	662	3,106	—	—	2,843	2,138	549	242	5,486	
CONNACHT :	8,361	39,520	31	54	47,290	30,269	4,489	1,834	71,677	14·5
Urban	3,700	18,022	10	25	16,059	10,446	1,803	740	29,233	
Rural	4,661	21,498	21	29	31,231	19,823	2,686	1,094	42,444	
CAVAN :	1,644	7,935	—	—	2,960	2,059	425	188	10,182	13·9
Urban	724	3,638	—	—	1,259	906	323	137	4,681	
Rural	920	4,297	—	—	1,701	1,153	102	51	5,501	
DONEGAL :	3,705	15,782	13	43	11,323	4,703	4,357	1,573	22,101	16·2
Urban	863	4,218	—	—	897	476	540	208	4,902	
Rural	2,842	11,564	13	43	10,426	4,227	3,817	1,365	17,199	
MONAGHAN :	1,895	9,730	4	6	1,739	1,154	1,548	679	11,569	19·9
Urban	1,487	7,793	4	6	1,591	1,053	1,378	608	9,460	
Rural	408	1,937	—	—	148	101	170	71	2,109	
ULSTER (3 Counties) :	7,244	33,447	17	49	16,022	7,916	6,330	2,440	43,852	16·4
Urban	3,074	15,649	4	6	3,747	2,435	2,241	953	19,043	
Rural	4,170	17,798	13	43	12,275	5,481	4,089	1,487	24,809	
SAORSTÁT EIREANN :	119,696	585,243	3,347	4,229	416,570	261,104	87,424	34,439	885,015	33·3
Urban	82,939	416,996	2,916	3,721	271,716	172,223	63,680	25,108	618,048	
Rural	36,757	168,247	431	508	144,854	88,881	23,744	9,331	266,967	

Table 17—Dressed weight of beef and veal and of mutton and lamb slaughtered during the twelve months ended 31st August, 1927. Cities and towns of 5,000 population and over.

—	Dressed weight of Beef and Veal slaughtered	Dressed weight of Mutton and Lamb slaughtered
	cwt.	cwt.
Dublin City	163,125	71,345
Pembroke ...	9,251	5,355
Rathmines and Rathgar ...	12,214	9,227
Blackrock ...	3,397	2,043
Dun Laoghaire	6,864	3,689
Total—Dublin and 4 adjoining urban districts ...	194,851	91,659
Cork ...	36,602	23,441
Limerick ...	12,446	7,274
Waterford ...	10,568	4,116
Galway ...	5,173	4,318
Dundalk ...	5,677	1,518
Drogheda ...	8,267	2,676
Wexford ...	11,478	2,846
Sligo ...	4,875	1,557
Tralee ...	3,832	2,420
Kilkenny ...	3,560	1,826
Clonmel ...	4,268	2,119
Bray ...	6,460	2,360
Athlone ...	4,143	1,802
Carlow ...	3,577	1,697
Cobh ...	6,891	2,473
Tipperary ...	2,511	2,003
Enniscorthy	3,639	1,510
Ennis ...	2,788	1,780
Youghal ...	3,229	1,836
Killarney ...	3,095	1,659
Ballinasloe ...	2,499	986
Dungarvan	2,435	965
New Ross ...	2,726	1,144

Table 18—Number of Pigs slaughtered on Farms for consumption in Farm Households and Estimated Production of Pigs during the 12 months ended 31st May, 1928. County and Provincial Data.

County and Province	Estimated Production. * (1)	Number of Pigs slaughtered on Farms for consumption in Farm households. (2)	Farm slaughterings (Col. 2) per 100 Farms.
Carlow	34,095	1,445	29
Dublin	12,434	363	3
Kildare	23,785	1,962	25
Kilkenny	62,199	8,245	73
Laoighise	50,833	2,326	23
Longford	31,901	1,108	14
Louth	28,047	710	9
Meath	23,870	2,090	16
Offaly	45,545	3,587	38
Westmeath	12,983	2,692	24
Wexford	116,562	3,249	24
Wicklow	41,367	2,021	26
LEINSTER ...	483,621	29,798	25
Clare	52,099	8,995	52
Cork	323,904	28,526	71
Kerry	120,669	10,921	48
Limerick	80,020	13,178	71
Tipperary	116,563	17,057	79
Waterford	62,677	3,315	36
MUNSTER ...	755,932	81,992	63
Galway	75,603	4,506	14
Leitrim	34,166	898	7
Mayo	72,002	2,790	8
Roscommon	28,328	1,473	7
Sligo	30,973	2,234	15
CONNACHT ...	241,072	11,901	11
Cavan	113,313	1,521	9
Donegal	34,897	480	2
Monaghan	56,910	668	5
ULSTER (3 Counties)	205,120	2,669	5
SAORSTÁT ÉIREANN	1,685,745	126,360	30

*Total production in Saorstát Eireann distributed pro rata with the average number of sows in each County.

B 69. Wt. 4644—1263. 3. 3. 1250. 3/30.—A. T. & Co., Ltd.

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END OF TITLE